fibres, as each layer deposits, the longer fibres span across a number of other fibres, thus generally maintaining the x-y orientation. The short fibres, being generally of a similar length or shorter than the thickness of the final web, tend to be pulled by the water flow into the interstices of the web, formed by the longer fibres, but do not tend to span more than one of the longer fibres. Thus there is much greater z-directionality of the shorter fibres. The web so-formed is dried in an oven, and if necessary placed in a solution of the final polymer, which may or may not be the same as the first polymer, allowed to dry and subsequently heat treated to set the final polymer, if used, or to set the first polymer. If it is not desirable for the first polymer to remain in the final web structure, it may be removed by this heat treatment or by an alternative appropriate process. In addition, any undesirable residues may be removed by the heat treatment or by an alternative appropriate process.

A1

IN THE CLAIMS

Please replace claims 1-7, 9, 10, 12-14, 16-17 and 20-25 with the following amended claims:

1. (Amended) A non-woven fibre web comprising a plurality of longer fibres in the x- and y-directions of average length greater than 5mm and a plurality of shorter fibres of average length less than 3mm wherein at least a proportion of the shorter fibres are orientated in the z-direction, and wherein the plurality of shorter fibres is at least 20% of the total weight of fibres, and wherein the density of the non-woven fibre web is from 0.1g/cm^3 to 0.35g/cm^3.

A2

2. (Amended) A non-woven fibre web comprising up to and including 80% by weight of longer fibres in the x- and y-directions of average length greater than 5mm, and 20% or more by weight of shorter fibres of average length less than 3mm wherein at least a proportion of the shorter fibres are orientated in the z-direction, and wherein the density of the non-woven fibre web is from 0.1g/cm^3 to 0.35g/cm^3.

3. (Amended) A non-woven fibre web according to claim 1 wherein the plurality of shorter fibres is no more than 85% by weight of total fibres in the substrate.

4. (Amended) A non-woven fibre web according to claim 3 wherein the plurality of shorter fibres is no more that 70% by weight of the total fibres.

A2

5. (Amended) A non-woven fibre web according to claim 1 or 2 wherein the longer fibres have a maximum average length of 50mm.

6. (Amended) A non-woven fibre web according to claim 5 wherein the longer fibres are of average length of 5mm to 30mm.

7. (Amended) A non-woven fibre web according to claim 1 or 2 wherein the shorter fibres are of average length less than 2mm.

A3

9. (Amended) A non-woven fibre web according to claim 1 or 2 wherein the shorter fibres have an average minimum length of 50μm.

10. (Amended) A non-woven fibre web according to claim 1 or 2 wherein the longer fibres and shorter fibres are independently selected from the group consisting of carbon, glass, silica, polymer, metal and ceramic fibres.

12. (Amended) A non-woven fibre web according to claim 1 or 2 wherein the density of the non-woven fibre web is from 0.1g/cm^3 to 0.2g/cm^3.

A4

13. (Amended) A process for the preparation of a non-woven fibre web according to claim 1, said process comprising the steps of:

(i) dispersing the longer and shorter fibres in solution to form a slurry;

(ii) adding at least one polymer to the slurry;

(iii) draining the liquid from the slurry to form a web, or forming a continuous structure by the controlled deposition of the slurry onto a moving bed mesh;

(iv) drying the web;

A4 (v) optionally placing the web in a solution of a final polymer and drying the web; and

(vi) heat treating the web.

14. (Amended) A gas diffusion substrate comprising a non-woven substrate comprising a non-woven fibre web as claimed in claim 1 or 2, and a filler material.

16. (Amended) A gas diffusion substrate according to claim 14 wherein the filler material comprises a catalyst material.

A5 17. (Amended) A gas diffusion electrode comprising a gas diffusion substrate as claimed in claim 1 or 2, and an electrocatalyst material.

20. (Amended) A membrane electrode assembly comprising a gas diffusion electrode as claimed in claim 17, a second gas diffusion electrode and a solid polymer membrane.

21. (Amended) A membrane electrode assembly comprising a gas diffusion electrode as claimed in claim 17, a gas diffusion substrate, and a solid A4 polymer membrane, wherein an electrocatalyst layer is applied to the side of the membrane facing the gas diffusion substrate.

22. (Amended) A membrane electrode assembly comprising a gas diffusion substrate as claimed in claim 14, a gas diffusion electrode, and a solid polymer membrane, wherein an electrocatalyst layer is applied to the side of the membrane facing the gas diffusion substrate.

23. (Amended) A membrane electrode assembly comprising a gas diffusion substrate as claimed in claim 14, and a second gas diffusion substrate, and a solid polymer membrane, wherein an electrocatalyst layer is applied to both sides of the solid polymer membrane.

24. (Amended) A fuel cell comprising a gas diffusion substrate as claimed in claim 14.

25. (Amended) A fuel cell comprising a gas diffusion electrode as claimed in claim 17.

Respectfully submitted,

Christopher R. Lewis, Reg. No. 36,201
Attorney for Applicants

EEA/tmb

Dated: August 14, 2001

Suite 301
One Westlakes, Berwyn
P.O. Box 980
Valley Forge, PA 19482-0980
(610) 407-0700

The Assistant Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

EXPRESS MAIL Mailing Label No.: EL910364781US
Date of Deposit: August 14, 2001

I hereby certify that this paper and fee are being deposited, under 37 C.F.R. § 1.10 and with sufficient postage, using the "Express Mail Post Office to Addressee" service of the United States Postal Service on the date indicated above and that the deposit is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Kathleen Libby